Amendments to the Specification

Please replace the paragraph beginning on page 10, line 14, of the specification with the following, rewritten paragraph:

Fig. 2A illustrates, in simplified form, the layout of servo bursts according a servo scheme that can be used in accordance with an embodiment of the present invention. In the illustrated scheme, the servo bursts include an A burst component 212 positioned symmetrically about a nominal track midline 214, two B burst components 216, 218 positioned trackwise "after" (i.e., downtrack in direction of arrow 222) the trackwise "lower" boundary 224 of the A burst and positioned radially symmetrically about the next outer (toward the outer diameter) track 226 and next inner track 228, a C component 232 positioned trackwise after the lower boundary 234 of the B components and positioned radially to be symmetric about a line midway between the track 214 and the next outer track 226, and a D component 236 positioned circumferentially after the lower boundary 238 of the C component 232 and positioned radially to be symmetric about a line 235 midway between the track 214 and the next inner track 228.

Please replace the paragraph beginning on page 16, line 3, of the specification with the following, rewritten paragraph:

Fig. 4B corresponds to **Fig. 4A** but shows the error power spectral density PSD (3σ) as a function of frequency, while **Fig. 4C** shows a histogram illustrating relative frequency of various magnitudes of error. In the example of **Fig. 4A**, the envelope shows

relatively less error at some of the spokes 416. **Fig. 4B** shows a peak near 3,000 Hz 418. **Fig. 4C** shows substantial error at +/- 15% of the data track ~~422~~.

Please replace the paragraph beginning on page 24, line 7, of the specification with the following, rewritten paragraph:

While still using ARC_1, the system then tracks on the closest null point which is above (i.e., toward the outer diameter), the "bad track (CNP_a 1226). While using ARC_1, the repeatable runout for CNP_a is calculated (termed RRO_a 1228). RRO_a is circularly convolved in the time domain with a function which is IDFT of the sum of 1 and the product of the control transfer function and the plant transfer function, to yield a value indicative of C/D null point shift, termed d_{CD} 1232 (or it may be A/B depending on the quadrant to which CNP_a belongs). The values d_{AB} and d_{CD} are then used to calculate correction values α and β for each spoke of the track, at least in affected portions of the track 1234 according to equation (8). The sign of α and β will be selected <u>1236</u> depending on the location of CNP_b and CNP_a relative to the quadrants 240A, B, C, D. The sign of α is changed if the null point CNP_b is in quadrant 2 or 3 and the sign of β is changed if the null point CNP_b is in quadrant 1 or 2. By definition, null points CNP_b and CNP_a are always in adjacent quadrants, e.g., 240A, 240B or 240B, 240C, etc. Track position detection (TPD) is then performed using corrected values for A, B, C and D, according equation (7)1238.

Please replace the paragraph beginning on page 26, line 7, of the specification with the following, rewritten paragraph:

Figs. 15-19 are illustrative of examples of drive performance before and after correction, according to embodiments of the present invention, are applied to a track of a disk with distorted servo bursts and squeezed track portions. Lines 1512a-f of **Figs. 15A-F** correspond to **Figs. 4A- 4F**, before correction according to embodiments of the present invention are applied. **Fig. 15G**, line 1512g shows a frequency spectrum of the non-repeatable portion of error and **Fig. 15H** is a histogram with fitted curve 1512h, corresponding to **Fig. 15C**, but for the non-repeatable error. **Fig. 15D**, compared to **Figs. 15A** and **15F** illustrate that, without correction, there is substantial repeatable runout. The shape of the graph lines 1612 (CNP_a), 1614 (CNP_b) of **Fig. 16** show null point locations (expressed in servo track units) at various spoke numbers along the track, illustrating that spokes with the greatest error are those which are squeezed. Note that TMR data in **Figs. 15A-15H** refer to destination location 56464.77 in **Fig. 16**. The graph lines 1712, 1714 of **Figs. 17A** and **17B** respectively show the values of the correction factors α and β (calculated generally according to equation (8)) at various spokes along the track. The graph lines 1812a-h of **Figs. 18A-18H** correspond generally to **Figs. 15A-H**, but with correction factors using the values of **Figs. 17A** and **17B** (applied according to equation (8)) calculated and applied according to equation (7). By comparing **Figs. 18A-H** with **Figs. 15A-H**, it is seen that correction factors according to embodiments of the present invention can substantially reduce error, even in regions where the tracks are squeezed. **Fig. 19** provides a plurality of graph lines, each line representing peak TMR at

one of the spokes along the track, as a function of distance off-track. More significant than individual graph lines is the envelope 1912 formed by the collection of lines. The envelope 1912 illustrates that, when correction according to embodiments of the present invention are applied, the peak TMR substantially remains below 10% of a servo track (at least for this example) in the range of -20% to +20% off-track positions around the nominal track location.